

[ORAL ARGUMENT NOT SCHEDULED]

No. 16-1420

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

AMERICAN RAILCAR INDUSTRIES, INC.,

Petitioner,

v.

FEDERAL RAILROAD ADMINISTRATION, *et al.*,

Respondents.

On Petition for Review of
Railworthiness Directive No. 2016-01
Issued by the Federal Railroad Administration

BRIEF FOR RESPONDENTS

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1), the undersigned counsel certifies as follows:

A. Parties and Amici

The petitioner is American Railcar Industries, Inc.

The respondents are the Federal Railroad Administration; Patrick T. Warren, Acting Administrator, Federal Railroad Administration; and Robert C. Lauby, Associate Administrator for Railroad Safety and Chief Safety Officer, Federal Railroad Administration.

No intervenors or amici have appeared.

B. Rulings Under Review

Petitioner seeks review of Federal Railroad Administration (“FRA”) Railworthiness Directive No. 2016-01 (the “Directive”), JA1, which was initially issued on September 30, 2016. The Directive was revised on November 18, 2017. JA11.

C. Related Cases

Petitioner previously challenged the Directive in a petition for review filed on November 28, 2016 (No. 16-1409). Petitioner subsequently withdrew its request for FRA to reconsider the Directive and filed a new petition with this Court in this case on December 12, 2016. The Court consolidated the two cases on December 14, 2016, and petitioner’s unopposed motion to withdraw its petition in No. 16-1409 was

granted on January 5, 2017. Counsel is unaware of any other related cases before this or any other court.

s/ Nitin Shah

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GLOSSARY

ACF	ACF Industries, LLC
ACF-300	Railroad tank cars manufactured by ACF to its “300 stub sill” design
ARI	Petitioner American Railcar Industries, Inc.
ARI-300	Railroad tank cars manufactured by ARI to its “300 stub sill” design
CIT	CIT Group
DOT	Respondent U.S. Department of Transportation
FRA	Respondent Federal Railroad Administration

INTRODUCTION

In May 2014, a specification DOT-111 railroad tank car manufactured by American Railcar Industries, Inc. (“ARI”) to its “300 stub sill” design (“ARI-300” cars) leaked ethanol. Subsequent investigation by the Federal Railroad Administration (“FRA”) showed pockets of trapped oxides (known as “slag”) and other defects near certain weld joints on the car—defects that could place the car at risk of leaking and that rendered the car noncompliant with the Hazardous Material Regulations (the “regulations”), 49 C.F.R. § 171.1 *et seq.*, for tank car design. An inspection of additional ARI-300 cars revealed that 15% had the same defects (as more cars were inspected, a total of 11% were found to have the same defects). Defects were also found in similarly designed cars manufactured by ACF Industries, LLC (“ACF”) (“ACF-300” cars).¹

Because ARI-300 cars are authorized to carry a wide range of hazardous materials (including highly flammable, explosive, and poisonous materials), the agency’s findings raised serious safety concerns. After an extensive consultation process with industry stakeholders and technical experts, FRA issued a carefully considered Railworthiness Directive (“Directive”) under 49 C.F.R. § 180.509(b)(4), requiring tank car owners to submit their ARI-300 tank cars to a qualified tank car facility for inspection and testing to ensure the cars are in a safe operating condition.

¹ ACF is not a party to this suit. Petition for Review at 1.

Petitioner, one of two companies (along with ACF) that manufacture specification DOT-111 cars to this particular design, raised concerns regarding the requirements of, and authority for, the Directive. After due consideration, FRA revised the Directive (“Revised Directive”) to address many of petitioner’s concerns, while rejecting others the agency believed were inconsistent with its objective of ensuring the safety of tank cars in hazardous materials transportation service.

Petitioner’s challenges to the Revised Directive are without merit. Petitioner’s contention that the Revised Directive is a legislative rule requiring notice and comment under the Administrative Procedure Act, 5 U.S.C. § 553 (“APA”), misconstrues the nature of the Revised Directive. Under the precedent of this Circuit, the Revised Directive is plainly adjudicatory in nature and not subject to the APA’s notice-and-comment requirements. Petitioner erroneously contends that FRA’s remedial authority is limited to requiring regulated parties to do what the regulations already require (albeit on a more frequent schedule), and thus anything beyond what the regulations already require is a “legislative rule” requiring notice and comment. In fact, the regulations expressly authorize the exact type of action FRA took here.

Petitioner’s various arguments that the Revised Directive is not supported by the record fare no better. The Revised Directive was based on FRA’s technical analysis of the leak and tests on hundreds of ARI-300 and ACF-300 tank cars. Given the potential for catastrophic consequences if defects in hazardous materials tank cars

are left unaddressed, FRA acted reasonably in requiring the inspections and tests it ordered in the Revised Directive.

STATEMENT OF JURISDICTION

The Court has jurisdiction to adjudicate petitioner's petition for review pursuant to 49 U.S.C. § 5127.

STATEMENT OF ISSUES

1. Whether FRA's Revised Directive—requiring owners of a specific type of rail tank car (found to be at risk of failure and not in compliance with the regulations) to submit a sample of their fleet for inspection and testing to ensure that the cars are safe to continue to operate in hazardous materials transportation service—constitutes a legislative rule requiring notice and comment under the Administrative Procedure Act.
2. Whether FRA acted arbitrarily or capriciously in determining that it had an objectively reasonable and articulable belief that a specific design of tank car manufactured by petitioner and one other manufacturer may be in an unsafe operating condition and not in compliance with the regulations, after one rail tank car leaked a hazardous material, and after subsequent inspections and tests of hundreds of other tank cars produced by the same manufacturers to the same design revealed a probability that a significant number of the other cars had the same defects as the tank car that leaked.

3. Whether FRA was arbitrary and capricious in determining, based on its technical expertise, that specific inspection, testing, and recordkeeping requirements were necessary to ensure that the rail tank cars are compliant with applicable regulations and safe for operation in hazardous materials transportation service.

PERTINENT STATUTES AND REGULATIONS

Pertinent statutes and regulations are reproduced in the addendum to this brief.

STATEMENT OF THE CASE

A. Statutory and Regulatory Background

Congress enacted the Hazardous Materials Transportation Act, 49 U.S.C. § 5101 *et seq.* (“Act”), “to protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce.” 49 U.S.C. § 5101. The Act implements its objective by providing the Secretary of Transportation (“Secretary”) with a broad array of regulatory and enforcement powers. The Act directs the Secretary to prescribe regulations for the “safe transportation . . . of hazardous material,” to apply to anyone who, among other things,

transports hazardous material in commerce . . . , causes hazardous material to be transported in commerce . . . , designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce . . . , prepares or accepts hazardous material for

transportation in commerce . . . , or certifies compliance with any requirement under [the Act].

Id. § 5103(b)(1). The Act broadly provides that those regulations “shall govern safety aspects, including security, of the transportation of hazardous material the Secretary considers appropriate.” *Id.* § 5103(b)(1)(B).

The Act also vests the Secretary² with general authority to “investigate, conduct tests, make reports, issue subpoenas, conduct hearings, require the production of records and property, take depositions, and conduct research, development, demonstration, and training activities.” 49 U.S.C. § 5121(a). The Act provides that a person subject to the Act must “maintain records and property, make reports, and provide information the Secretary by regulation or order requires,” and “make the records, property, reports, and information available for inspection when the Secretary undertakes an investigation or makes a request.” *Id.* § 5121(b). The Act confers on the Secretary authority,

as necessary, under terms and conditions specified by the Secretary, [to] order the offeror, carrier, packaging manufacturer or tester, or other person responsible for the package to have the package transported to, opened, and the contents examined and analyzed, at a facility appropriate for the conduct of such examination and analysis.

Id. § 5121(c)(1)(E). The Act also authorizes the Secretary to issue emergency orders requiring immediate abatement of an imminent hazard without notice or an

² The Secretary’s authority to enforce the Act and its implementing regulations with respect to transportation of hazardous materials by railroad is delegated to FRA. *See* 49 C.F.R. § 1.89(j).

opportunity for a hearing, subject to certain restrictions. *Id.* § 5121(d)(1). The Act permits the government to initiate a civil action to enforce the Act “or a regulation prescribed or order, special permit, or approval issued under” the Act, *id.* § 5122, and provides for civil and criminal penalties for such violations, *id.* §§ 5123, 5124.

The Act is implemented through the regulations, which are codified in Title 49 of the Code of Federal Regulations. Part 179 of those regulations sets out detailed specifications for rail tank cars approved for transportation of hazardous materials, including the specification DOT-111 tank cars at issue in this litigation. The regulations require all joints on DOT-111 tank cars to be fusion-welded in compliance with the requirements of the Association of American Railroads’ Specification for Tank Cars, a document commonly known in the industry as the “Tank Car Manual.” 49 C.F.R. § 179.200-210. The Tank Car Manual (JA28, JA287) is formally incorporated by reference into the regulations. *See* 49 C.F.R. § 171.7(k). Part 179 states that all tanks “to which this part is applicable[] must be built to the specifications prescribed” in the Part. Part 179 also requires manufacturers to put in place a quality assurance program that ensures that the tank cars they manufacture “conform[] to the requirements of the applicable specification and regulations.” *Id.* §§ 179.1(b), 179.7(a).

The regulations also specify requirements pertaining to maintenance, reconditioning, repair, inspection, and testing of hazardous material “packaging” (including container vessels such as tank cars). These requirements are known as

“qualification” requirements, as they determine whether the packages remain “qualified” for transporting hazardous materials. Generally, with respect to DOT-specification tank cars, owners must perform standard qualification inspections and tests of the cars every ten years, with certain tests occurring at more frequent intervals. *See* 49 C.F.R. § 180.509(c). Separate and apart from these requirements, the regulations also provide that in certain circumstances, tank cars must be re-qualified. Of particular relevance here, tank car owners must

ensure an appropriate inspection and test according to the type of defect and the type of maintenance or repair performed if...the Associate Administrator for Railroad Safety, FRA, requires it based on the existence of an objectively reasonable and articulable belief that a tank car or a class or design of tank cars may be in an unsafe operating condition.

Id. § 180.509(b).

B. The Leaking Tank Car and FRA Investigation

On May 9, 2014, a railroad operator notified FRA that a DOT-111 specification tank car, manufactured by petitioner, had leaked denatured alcohol (also known as ethanol) in a railyard in Franklin Park, Illinois. JA2. FRA officials performed an initial inspection the following day, after a patch had been applied to stop the leak, and a follow-up inspection was performed on May 29, 2014. *Id.* The follow-up inspection included technical examinations of weld joints at the point of the leak using liquid penetrant, ultrasonic, and visual inspection methods. *Id.* Those tests revealed defects in the sump and bottom outlet skid groove attachment welds,

including pinholes, incomplete joint fusion, incomplete joint penetration, and cracks.

Id. Additional metallurgical analysis of the weld revealed pockets of slag beginning close to the interior weld surface and extending almost entirely through the weld.

JA3.

FRA then worked with the owner of the tank car that had leaked, CIT Group (“CIT”), to test an additional 386 ARI-300 tank cars in CIT’s fleet to determine if other similarly designed and manufactured tank cars contained the same defects in the welds and carried a risk that another leak could occur. CIT’s ultrasonic tests revealed that a significant percentage of the tested cars contained the same weld defects as the leaking car. Of the 386 tank cars initially tested, 15% of the cars contained the same weld defects as the leaking car. JA4. As testing continued, by the time FRA issued the Revised Directive, that figure stood at approximately 11%. JA1849-JA1850. CIT’s data showed that the cars with these weld defects were welded by seven different welders. JA558, JA751, JA753.

Concurrently, FRA sought information from petitioner on its welding protocols and potential corrective measures it could take. FRA shared information about CIT’s tests and testing standards with petitioner. *See, e.g.*, JA1481-JA1485, JA830, JA834, JA860, JA880, JA948, JA1124-JA1126, JA1474-JA1476. At the same time, ARI also voluntarily tested some of its own ARI-300 and ACF-300 cars. JA1702-JA1703, JA1709-JA1718. Those tests found weld defects similar to those on the leaking tank car in approximately 17% of its tested cars. JA1715-JA1716. During

this period, FRA met with petitioner to observe its testing and welding practices, and to discuss the weld defects that petitioner and CIT were observing. *See, e.g.*, JA1512-JA1513. Several conference calls between FRA and petitioner occurred, and emails were exchanged regularly. *See, e.g.*, JA395, JA747, JA755, JA854, JA945, JA1126, JA1154, JA1510, JA1555, JA1557. FRA and petitioner were unable to agree on the scope of an appropriate remedy to the likely weld defects in other ARI-300 cars. JA775, JA1546, JA1553.

C. The Initial Directive and Further Consultations with Petitioner

FRA issued the Directive on September 30, 2016. The Directive required owners of ARI-300 and ACF-300 cars to ensure that the cars underwent an appropriate inspection and testing of the cars' sump and skid groove attachment welds (the welds that failed on the tank car that leaked) at an approved tank car facility in order to ensure no flaws existed that could result in the loss of tank integrity. JA2. The Directive recounted the tests CIT performed on its ARI-300 car that leaked and the other ARI-300 in CIT's fleet. Based on an analysis of those tests, the Directive concluded that the defects in the welds (*i.e.*, the slag pockets and the incomplete fusion of the welds), over time caused the welds to crack, which in turn caused the tank car to leak. JA3. These slag pockets, the Directive reasoned, could only form if welders did not adhere to welding practices required under the regulations and the

Tank Car Manual.³ *Id.* Accordingly, FRA concluded that the other tested ARI-300 and ACF-300 cars with similar extensive amounts of slag and incomplete fusion “are not likely to withstand the design stresses and in-train forces they will encounter,” and over time, the defects will develop into cracks and will also leak. JA4. The Directive noted that the problem was found on ARI-300 and ACF-300 cars that were welded by seven different welders, and also concluded that a design characteristic of the cars—“the single bevel groove weld joint design for these welds that allowed the slag to accumulate at the root of the welds and along the walls of the tank plate, sump, and BOV skid castings”—contributed to the defective weld conditions. JA4-JA5.

Based on these findings, the Directive ordered owners of ARI-300 and ACF-300 tank cars to provide FRA with a list of all ARI-300 and ACF-300 tank cars in their fleet within 30 days of the issuance of the Directive. The Directive further required tank car owners or operators to ensure: (1) that the cars are not leaking; (2) that they comply with all applicable regulatory requirements; and (3) that the cars are in a safe operating condition. JA5. The Directive required a documented visual inspection to occur each time a ARI-300 or ACF-300 tank car was offered into

³ For “multipass” welds such as these, the Tank Car Manual (at Appendix W) requires welders to clean and inspect for slag and other flaws between each weld pass. JA333 § 14.3, JA 335 § 14.10. If this process does not occur, then slag may become trapped between weld passes, preventing full fusion of the weld and leading to the possibility of cracks initiating and propagating, potentially leading to leakage. JA3.

transportation, and required tank car owners to maintain that documentation for ten years. JA5-JA6.

The Directive also required visual and nonvisual testing of the affected joint welds “[d]ue to the subsurface location of the identified slag inclusions and related cracks.” JA6. Citing a Department of Defense handbook on nondestructive system testing, the Directive required owners to perform tests that would achieve a 90% probability of detection of the same type of defects present on the already-inspected ARI-300 and ACF-300 cars. *Id.* The Directive required that the inspections and tests be documented, including with digital recordings of ultrasonic tests, and that the records be maintained for ten years. The Directive required that these tests be completed within 12 months for tank cars in hazardous materials service, within 18 months for tank cars in non-hazardous materials service, and within 24 months for tank cars being placed in service from storage. JA8.

After issuing the Directive, FRA received additional information, including questions and concerns, from petitioner and other industry stakeholders. *See, e.g.*, JA1704-JA1706, JA1719, JA1729, JA1739, JA1768, JA1806, JA1800, JA1801, JA1808. In particular, in an October 7, 2016, letter, petitioner (1) requested a 30-day extension to all deadlines; (2) asserted that some testing requirements were “impractical and confusing”; and (3) suggested that some aspects of the Directive exceeded FRA’s authority. JA1709. In two subsequent letters, on October 14 and 27, 2016, petitioner asserted that the timeline and 90% probability of detection standard for testing and

finding defects rendered compliance with the Directive “unattainable.” JA1729, JA1808. Petitioner claimed that the class of cars to which the Directive applies is overly broad, and considered the recordkeeping requirements unfeasible. *Id.* Petitioner provided FRA with a summary report of its inspections to that point. JA1719. A high-level meeting between petitioner and FRA officials was held on October 24, 2016, at which petitioner discussed its concerns and FRA elaborated upon the reasoning underlying its actions. JA1800-JA1805.

D. The Revised Directive

In response to this new information and petitioner’s concerns, FRA issued a Revised Directive (JA11) on November 18, 2016, implementing the following revisions to the Directive:

- Requiring a representative sampling inspection program of the 15% of ARI-300 and ACF-300 tank cars in hazardous materials service with the highest mileage at the time of the Revised Directive’s issuance, rather than requiring inspection and testing of every in-service tank car (JA15-JA16);
- Removing the requirement for testing out-of-service tank cars (JA16);
- Extending deadlines by more than 45 days, to run from the Revised Directive issuance date of November 18, 2016, instead of the original Directive’s issuance date of September 30, 2016 (JA14);

- Revising recordkeeping requirements to require documentation of visual inspections, but to require submission of those records to tank car owners only when a defective condition is detected (JA16);
- Clarifying the required inspection and test methods, including to identify the size of a weld defect that must be detected at a 90% probability rate to satisfy the Revised Directive's requirement (JA18); and
- Clarifying the digital recordkeeping requirements, including to specify that digital photographs would satisfy the ultrasonic testing documentation requirement (JA19).

FRA also considered and rejected other concerns raised by petitioner. FRA declined to further narrow the scope of tank cars subject to inspection, concluding that the failure of the one tank car in May 2014, as well as the “defective weld conditions identified in a large number of ARI-manufactured cars of the same design, demonstrate[s] the need to ensure all cars built to this particular design are inspected and repaired, as necessary, as soon as practicable.” JA15. In particular, FRA declined to exclude a certain specification of tank cars, so-called AAR 211 cars, from the scope of the Revised Directive, because ARI and ACF manufactured those cars to the same

design as the other ARI-300 and ACF-300 cars at issue and, thus, the cars presented the same risk of weld defects.⁴ JA16.

FRA declined petitioner's request to further revise the type of testing required or the timelines for completion. While acknowledging "the strain the timelines in the [Revised] Directive may place on existing tank car cleaning, inspection, and repair capacity," FRA noted that one known hazardous material release had occurred from a car of this design and this release occurred less than two years after the car was originally manufactured (eight years prior to the car's scheduled qualification). JA17. FRA therefore concluded that it would be too great a risk to allow tank car owners to wait until each car's next regularly scheduled qualification to perform the required inspection and testing on joint welds. FRA further concluded that notwithstanding petitioner's claims to the contrary, a 90% probability of detection was, in fact, feasible as defined in the Directive and clarified in the Revised Directive. Indeed, as the Revised Directive notes, ARI had already achieved a 90% probability of detection with respect to volumetric testing at the time the Revised Directive was issued. JA18.

FRA also reiterated, citing 49 C.F.R. § 180.509(b)(4), that the potential defects on ARI-300 and ACF-300 tank cars, and the fact that such a defect on one tank car

⁴ AAR 211 tank cars are dimensionally and structurally the same as specification DOT-111 tank cars, including ARI-300 and ACF-300 cars (*i.e.*, the weld joints on AAR 211 cars are identical to those on ARI-300 and ACF-300 cars), except for minor differences (AAR 211 cars are exempt from spot radiography of rail joints). *See* JA290 § 3.1.1).

had already caused a hazardous material leak, led the agency to conclude that the ARI-300 and ACF-300 tank cars “may be in an unsafe operating condition.” JA20.

SUMMARY OF ARGUMENT

FRA issued its Directive requiring that a specific design of rail tank cars undergo specific inspections and tests based on its reasonable and articulable belief that the design of tank cars may be in an unsafe operating condition. It reached this conclusion after thorough investigation and analysis of the circumstances surrounding the leaking ARI-300 car. Its investigation and analysis found that the leak was caused by serious defects in the joint welds at the bottom of the tank car. Follow-up inspections and tests of hundreds of other tank cars revealed that a significant percentage of tank cars of the same design possessed the same defect that had caused the leak. Based on these findings, and after substantial consultation with petitioner, technical experts, and other industry stakeholders, FRA issued the Revised Directive.

Petitioner advances two principal arguments challenging the Revised Directive, both of which lack merit. First, petitioner contends that the Revised Directive is a legislative rule that FRA issued without notice and comment. That argument misconstrues the nature of the Revised Directive, which is a quintessential adjudicative order, validly issued under FRA’s statutory and regulatory authority. As a result of FRA’s investigation of the failed ARI-300 tank car, the Revised Directive addresses particular case-specific facts and requires inspection and testing to be undertaken with respect to one specific design of tank car manufactured by two

individual manufacturers (petitioner and ACF). Petitioner’s related argument that the Revised Directive is inconsistent with the regulations and with the Act fails for much the same reason—both the regulations and Act contemplate the type of action taken by FRA with the Revised Directive, and do not limit the scope of inspections and testing to those prescribed by the regulations for routine interval qualification reviews.

Petitioner’s contention that the Revised Directive is arbitrary and capricious because it is unsupported by the record is also misplaced. To the contrary, the Directive, as revised, contains ample reasoning and reflects careful consideration of petitioner’s comments and concerns. The Revised Directive and record show that FRA acted reasonably and appropriately to address a pressing safety concern. Its judgments about the cause of the hazardous materials leak, and the scope and nature of follow-up inspections and tests needed to prevent a potentially disastrous recurrence reflect its substantial technical expertise and are entitled to deference.

STANDARD OF REVIEW

Because the statute authorizing judicial review, 49 U.S.C. § 5127, does not provide a standard of review, the Court applies the familiar standard provided by the Administrative Procedure Act. *See Al-Fayed v. CIA*, 254 F.3d 300, 304 (D.C. Cir. 2001) (quoting *Dickson v. Secretary of Defense*, 68 F.3d 1396, 1404 n.12 (D.C. Cir. 1995)). Accordingly, the Court will not disturb the agency’s decision unless it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). The high degree of deference ordinarily afforded agency judgments is at

its apex with respect to highly technical or scientific matters implicating the agency's unique expertise. *Troy Corp. v. Browner*, 120 F.3d 277, 283 (D.C. Cir. 1997); *International Fabricate Inst. v. EPA*, 972 F.2d 384, 389 (D.C. Cir. 1992) ("The rationale for deference is particularly strong when [the agency] is evaluating scientific data within its technical expertise."). Substantial deference is also owed where the agency engages in predictive judgments regarding how an industry will respond to agency action. *Public Citizen, Inc. v. NHTSA*, 374 F.3d 1251, 1260 (D.C. Cir. 2004) (deferring to NHTSA's judgment about manufacturers' likely response to new airbag safety standard).

ARGUMENT

I. FRA Issued the Revised Directive in Accordance with the APA's Procedural Requirements.

Petitioner's argument that the Revised Directive should be invalidated because notice and comment were required disregards the settled principle that an agency's exercise of its enforcement authority to address a particular individual circumstance is not a "rule" requiring notice and comment. FRA directives issued under 49 C.F.R. § 180.509(b)(4) are enforcement actions that clearly fall under the APA's adjudicatory framework, and therefore are not subject to the APA's rulemaking procedures. There is no legal or logical basis to support the premise that FRA somehow amended its regulations merely because it ordered inspections and tests that go beyond what the regulations already require at routine intervals. Nor can petitioner show any prejudice from the absence of notice-and-comment procedures.

A. Notice and Comment Were Not Required.

Petitioner argues that the Revised Directive is a legislative rule under the APA, based apparently on the belief that any agency action with a binding, prospective legal effect must be a legislative rule. That is not so. The Revised Directive has all the characteristics of an informal adjudicatory order, and therefore should be treated as one for purposes of the APA. Nor, contrary to petitioner's assertion, does the Revised Directive constitute amendment or repudiation of any aspects of the regulations. Rather, the actions taken by FRA in this matter are expressly contemplated by the regulations and are entirely consistent with the Act.

1. The Revised Directive Is Adjudicatory in Nature, and Therefore Is Not Subject to the APA's Rulemaking Requirements.

FRA issued the Revised Directive in the course of a lengthy, thorough, and ongoing process to evaluate the cause of a tank car's leak of a hazardous material and to assess the risk that such a leak would likely recur in other tank cars built to the same design. The Revised Directive does not prescribe new standards to be required in the future of all tank cars for qualification for use in transporting hazardous materials. Instead, the Revised Directive merely requires owners of specific, identified tank cars, built to a certain design by only two manufacturers, using procedures that do not comply with the regulations or the Tank Car Manual, and that have been found to have potentially dangerous weld defects, to submit a sample of those tank

cars for inspection and testing. FRA's Revised Directive is a quintessential act of case-by-case adjudication, rather than a legislative rule requiring notice and comment.

Under the APA, an "adjudication" is defined as the "agency process for the formulation of an order," 5 U.S.C. § 551(7), and an "order" is "the whole or a part of a final disposition, whether affirmative, negative, injunctive, or declaratory in form, of an agency in a matter other than rule making but including licensing," *id.* § 551(6). A "rule," on the other hand, is "the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy." *Id.* § 551(4).

Courts have generally found that the object of rulemaking is the prescription of broad policy of a legislative nature. *See, e.g., United States v. Florida E. Coast Ry.*, 410 U.S. 224, 245-46 (1973) (generally applicable rate-setting involving "basically legislative-type judgment, for prospective application only, rather than in adjudicating a particular set of disputed facts"); *Wisconsin Gas Co. v. FERC*, 770 F.2d 1144, 1166 (D.C. Cir. 1985) (rulemaking most appropriate "for determination of legislative facts and policy of general, prospective applicability"). Adjudication, on the other hand, generally involves a determination of facts in a particular matter with regard to specific parties. *See, e.g., Conference Grp. v. FCC*, 720 F.3d 957, 965 (D.C. Cir. 2013) (Commission review of provider audit, although it required interpretation of legal term with broader implications, was adjudication); *Association of Nat'l Advertisers v. FTC*, 627 F.2d 1151, 1161 (D.C. Cir. 1979) ("The factual predicate of adjudication

depends on ascertainment of facts concerning the immediate parties,” whereas “the nature of legislative fact is ordinarily general, without reference to specific parties.”) (internal quotation marks omitted).

This Court has applied the adjudication framework to other agency orders bearing similarities in character to the Revised Directive. In *Safe Extensions, Inc. v. FAA*, 509 F.3d 593 (D.C. Cir. 2007), for example, the Court held that an FAA “advisory circular,” mandating that a particular class of runway light fixtures be subjected to a certain stringent test, was adjudicatory in nature. These circulars, the Court concluded, “fall into the vast category of ‘informal adjudications’ in which agencies routinely engage,” and “no statute requires the FAA to engage in the notice-and-comment process or hold proceedings” when it conducts such informal adjudications. *Id.* at 604. In *Everett v. United States*, 158 F.3d 1364, 1368 (D.C. Cir. 1998), this Court rejected an argument that notice and comment were required for the United States Forest Service’s decision to deny an applicant a special use permit to land a helicopter on agency land. And in *General American Transportation Corp. v. Interstate Commerce Commission*, 883 F.2d 1029 (D.C. Cir. 1989) (order denying reh’g), the Court concluded that the Interstate Commerce Commission’s reversal of a longstanding policy—preventing railroads from charging railcar owners for transporting empty cars to repair depots for maintenance—came in an adjudicatory proceeding, despite the broad effect and some legislative aspects to the decision.

Whether to proceed by rulemaking or adjudication in a particular matter is generally left to the agency's discretion. In fact, this Court has held that "agency discretion is at its peak in deciding such matters as whether to address an issue by rulemaking or adjudication." *American Gas Ass'n v. FERC*, 912 F.2d 1496, 1519 (D.C. Cir. 1990) (citing *SEC v. Chenery Corp.*, 332 U.S. 194, 201-03 (1947); *NLRB v. Bell Aerospace Co.*, 416 U.S. 267 (1974)). Choosing to proceed by adjudication is particularly sound "where important factors may vary radically from case to case." *Id.*

Here, given the agency's primary objective of determining whether other tank cars possess the same defect that might cause a dangerous hazardous materials leak, FRA sensibly chose to proceed through its administrative process of directing owners of tank cars known to likely contain the same defects to submit their tank cars for inspection and testing. This approach permitted FRA to focus on the particular concerns regarding the ARI-300 and ACF-300 cars, and to require additional inspection and testing to determine whether further corrective measures will be necessary. While the results of the inspections and tests the Revised Directive requires could eventually lead DOT to seek to revise the regulations to effect more general changes to tank car qualification requirements, the Revised Directive is focused exclusively on the particular risk that specific cars, manufactured by two specific manufacturers, may present.

Petitioner cites *National Association of Home Builders v. U.S. Army Corps of Engineers*, 417 F.3d 1272, 1285 (D.C. Cir. 2005), for the proposition that "agency

action that imposes new and prospective industry-wide requirements is a rule, regardless of how the agency may label the action.” Br. 25. But that case is of no help to petitioner here. Unlike in *Home Builders*, the Revised Directive in this case does not announce a new policy of general applicability; it requires additional inspection and testing of one specific tank car design, manufactured by petitioner and just one other company, based upon specific factual findings and tests regarding those cars. There are no “new and prospective industry-wide requirements” imposed by the Revised Directive.⁵

2. Petitioner’s Contention That the Revised Directive Is “Inconsistent with Law” Is Without Merit.

Petitioner contends that the Revised Directive is “inconsistent with law” because it imposes “new and unprecedented tests” that are not permitted by the regulations. Br. 26, 46. That contention is inconsistent with the applicable regulation.

An agency’s interpretation of its own regulations is generally “controlling” unless it is “plainly erroneous or inconsistent with the regulation.” *Texas v. EPA*, 726 F.3d 180, 194 (D.C. Cir. 2013) (quoting *Auer v. Robbins*, 519 U.S. 452, 461-62 (1997)) (quotation marks omitted); *see also Decker v. Northwest Emtl. Def. Ctr.*, 133 S. Ct. 1326,

⁵ The other cases Petitioner cites concern the differences between an interpretative rule and a legislative rule under the APA. These cases are inapposite since it is well settled that agencies may establish a new substantive principle in an adjudicatory proceeding. *See NLRB v. Bell Aerospace Co.*, 416 U.S. at 294; *Chenery Corp.*, 332 U.S. at 202.

1337 (2013). In fact, as the agency reasonably concluded, the regulations contemplate precisely the type of action taken by FRA here.

Contrary to petitioner's contention, the regulations do not limit FRA's remedial authority to merely requiring tests that are already required by the regulations. Indeed, section 180.509(b)(4) explicitly authorizes FRA to require non-routine inspections:

(b) Conditions requiring qualification of tank cars. Without regard to the qualification compliance date requirements of any paragraph of this section, an owner of a tank car or an internal coating or lining must ensure an appropriate inspection and test according to the type of defect and the type of maintenance or repair performed if:

- (1) The tank car shows evidence of abrasion, corrosion, cracks, dents, distortions, defects in welds, or any other condition that may make the tank car unsafe for transportation.
- (2) The tank car was in an accident and shows evidence of damage to an extent that may adversely affect its capability to retain its contents or to otherwise remain railworthy.
- (3) The tank bears evidence of damage caused by fire.
- (4) The Associate Administrator for Railroad Safety, FRA, requires it based on the existence of an objectively reasonable and articulable belief that a tank car or a class or design of tank cars may be in an unsafe operating condition.

49 C.F.R. § 180.509(b). The Revised Directive reflects FRA's reasonable conclusion that the hazardous materials leak from an ARI-300 tank car, and the presence of the same defects on a significant percentage of similarly manufactured and designed tank cars subsequently tested, presented an "objectively reasonable and articulable belief that a . . . class or design of tank cars may be in an unsafe operating condition," and that in such a circumstance, the regulatory language requiring an "appropriate

inspection and test according to the type of defect and the type of maintenance or repair performed” is not limited to the same routine tests that the regulation requires at regular intervals.

Petitioner identifies ways in which the inspection and testing requirements of the Revised Directive extend beyond the routine qualification inspection and testing requirements provided for in the regulations. *See* Br. 27-28.⁶ These differences do not render the Revised Directive a substantive rule for the reason already discussed: agencies are free to establish substantive requirements in the process of engaging in case-by-case adjudication. *See supra* note 5 and accompanying text. Nor do the additional inspection and testing requirements render the Revised Directive inconsistent with the regulation. Contrary to petitioner’s contention, Br. 47-48, the regulatory language requiring “an appropriate inspection and test according to the type of defect” does not limit the scope of inspection and testing in these circumstances to the routine recurring qualification tests tank car owners are required to perform at defined intervals. Rather, this language expressly contemplates that the required inspection and testing should be “appropriate” based on the nature of the identified potential defects. And as will be discussed in the next section, the Revised

⁶ Although FRA does not dispute Petitioner’s general statement that the Revised Directive requires inspection and training beyond what would be required under the regulations’ routine interval inspections and tests, FRA does not agree with Petitioner’s assertion that the regulations require “Level III” operators to determine “whether a ‘Level II’ technician requires additional training.” Pet. Br. 27-28.

Directive reflects FRA’s carefully considered judgment regarding the appropriate inspection and test that should be required in light of the specific problem identified with the welds of ARI-300 and ACF-300 cars.

Nor, as petitioner appears to suggest, Br. 47, does the regulation leave it to tank car owners to decide on an “appropriate” inspection and test. FRA’s consistent interpretation of the relevant language, as reflected in the Revised Directive and its previous directives issued under 49 C.F.R. § 180.509(b)(4), is that once it has identified potential defects that may render tank cars unsafe, FRA has the authority to determine the appropriate inspections and tests necessary to ensure the defects are adequately addressed. *See, e.g.,* Federal Railroad Administration, *Railworthiness Directive for Railroad Tank Cars Equipped With Certain McKenzie Valve & Machining LLC Valves*, 80 Fed. Reg. 14,027 (Mar. 18, 2015); *Notice of Inspection Requirement for Richmond-Built Tank Car Tanks Originally Equipped with “Foam-In-Place” Insulation*, 64 Fed. Reg. 18,473 (April 14, 1999). It would be a rather peculiar administrative regime to authorize FRA to require inspections and tests based on the finding that tank cars may be in an unsafe operating condition, but to permit the tank car owners to perform whatever inspections and tests they wish and consider the matter resolved.

FRA’s issuance of the Revised Directive gives effect to its authority to determine that a tank car, or a class or design of tank cars, is potentially unsafe. Its ability to make the “unsafe operating condition” determination expressly contemplated by section 180.509(b)(4) would be of no moment if it could not also

advise a tank car owner of the steps the owner must take to address the problem to ensure the tank cars are in compliance with the regulations and are no longer at risk of presenting the unsafe condition. FRA’s interpretation of this regulatory provision, reflected through its practice of exercising its authority under 49 C.F.R. § 180.509(b)(4) as it has done here, is therefore eminently reasonable and entitled to deference.

Petitioner also contends that the Revised Directive is contrary to the Act because the Act requires regulations governing the transportation of hazardous materials to be promulgated pursuant to the informal rulemaking procedures of the APA. *See* 49 U.S.C. § 5103(b)(2). This provision again does not apply to the Revised Directive, because the Revised Directive is not a rule. Moreover, the Act permits a broad array of non-rule administrative action, including, as relevant here, to “investigate, conduct tests, make reports, issue subpoenas, conduct hearings, require the production of records and property, take depositions, and conduct research, development, demonstration, and training activities.” 49 U.S.C. § 5121(a). The Revised Directive—which requires tank cars to be sent to repair facilities for inspection and testing—falls within the scope of the Act’s grant of administrative powers.⁷

⁷ FRA has not invoked its authority to “issue an order requiring compliance with this chapter or a regulation prescribed, or an order, special permit, or approval issued, under this chapter.” 49 U.S.C. § 5121(a). If a tank car owner refused or failed

B. Petitioner Cannot Show Prejudice from the Lack of Notice and Comment.

For the reasons discussed, notice and comment under section 553 of the APA, or notice and the opportunity for a hearing under section 5121(a) of the Act, were not required here. But even if they were required, petitioner cannot show any prejudice from this alleged omission.

The APA provides that a reviewing court should take “due account . . . of the rule of prejudicial error.” 5 U.S.C. § 706. This language reflects an incorporation of the normal “harmless error” rule ordinarily applied in civil litigation. *See Shinseki v. Sanders*, 556 U.S. 396, 406 (2009). “The burden of showing that an error is harmful normally falls upon the party attacking the agency’s determination.” *Id.* at 409 (citing, *inter alia*, *Air Canada v. U.S. Dep’t of Transportation*, 148 F.3d 1142, 1156-57 (D.C. Cir. 1998)). A petitioner does not meet this burden where “redoing the administrative proceedings would bring about the same outcome.” *Doolin Sec. Sav. Bank v. Office of Thrift Supervision*, 139 F.3d 203, 214 (D.C. Cir. 1998); *see also American Coke & Coal Chems. Inst. v. EPA*, 452 F.3d 930, 941 (D.C. Cir. 2006) (rejecting inadequate notice

to conduct the inspection and test required by the Revised Directive, FRA would consider, in an appropriate case, whether to issue an order requiring owners to comply with the regulations, and to cure any defects in their fleets of ARI-300 and ACF-300 cars. That subsequent order would be the “order requiring compliance” under section 5121(a) of the Act. A failure to comply with that subsequent order would form the basis for any enforcement action FRA may initiate pursuant to 49 U.S.C. § 5122.

argument because petitioner “fails to suggest what difference further comment” would have made); *Chemical Mfrs. Ass’n v. EPA*, 870 F.2d 177, 202 (5th Cir. 1989).

The record shows an extensive, nearly continuous, back-and-forth between petitioner and FRA during the period leading up to the issuance of the Directive, as FRA worked to develop a fuller understanding of the scope of the safety problem with the identified tank cars. FRA received numerous submissions of factual information and analysis from petitioner and other industry stakeholders, and fully considered them. *See, e.g.*, JA175, JA181, JA255, JA284, JA389, JA395, JA401, JA403, JA514, JA515, JA569, JA741, JA768, JA827, JA829, JA1486, JA1510, JA 1514, JA1546. After FRA issued the initial Directive, FRA and petitioner continued to discuss the matter, both via e-mail and in a meeting with FRA senior leadership and petitioner’s management. In its correspondence and in meetings and phone calls, petitioner raised every issue about which it now complains regarding the Revised Directive. *See, e.g.*, JA1704, JA1706-JA1708, JA1709, JA1729, JA1739, JA1768, JA1800, JA1801, JA1806, JA1808, JA1812, JA1814, JA1844.

FRA considered each issue petitioner raised and revised its Directive in many respects, while providing a reasoned explanation as to why it rejected other comments. *See* JA12-JA21. Most substantially, FRA agreed to allow tank car owners to submit a sample of 15% of their cars for inspection and testing, rather than requiring every in-service car to be inspected and tested. JA14-JA16. And while significantly reducing the number of tank cars that would be subject to inspection and

testing, FRA also extended the effective date as requested by petitioner. JA16. In addition, FRA agreed to remove out-of-service tank cars from the scope of the Directive, and revised, clarified, and reduced the recordkeeping requirements based on petitioner's comments. *Id.* Where FRA did not agree with petitioner's comments, FRA explained its rationale. JA12-JA21. Petitioner does not identify any issues with the Revised Directive that it has not already raised for FRA's consideration. In these circumstances, petitioner cannot show it was in any way prejudiced by the alleged procedural shortcomings.

II. The Directive Is Amply Supported by the Record.

The Directive and Revised Directive carefully explain FRA's reasoning for its decision, and its findings are fully supported by the record. This Court reviews the agency's findings and reasoning under the deferential "arbitrary and capricious" standard. 5 U.S.C. § 706(2)(A); *see also Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Courts are especially deferential in matters implicating the agency's technical or scientific expertise, or where a matter calls for the agency's predictive judgments regarding the regulated industry. *Troy Corp. v. Browner*, 120 F.3d 277, 283 (D.C. Cir. 1997); *International Fabricate Inst. v. EPA*, 972 F.2d 384, 389 (D.C. Cir. 1992) ("The rationale for deference is particularly strong when [the agency] is evaluating scientific data within its technical expertise."); *Public Citizen, Inc. v. NHTSA*, 374 F.3d 1251, 1260 (D.C. Cir. 2004) (deferring to NHTSA's predictive judgment about manufacturers' response to new airbag safety standard). Applying this

deferential standard, there is no question that the Revised Directive is valid and should be upheld.

A. The Record Establishes FRA’s “Objectively Reasonable and Articulable Belief” That ARI-300 and ACF-300 Tank Cars May Be in an Unsafe Operating Condition.

The Revised Directive reflects FRA’s considered judgment that the defective joint welds in the identified ARI-300 and ACF-300 cars, which already caused one hazardous materials leak and which were detected on 15% of the tested cars, created “an objectively reasonable and articulable belief that a tank car or a class or design of tank cars may be in an unsafe operating condition.” FRA based this conclusion principally on three important, essentially uncontroverted pieces of evidence:

- **Analysis of the tank car that leaked ethanol revealed that the leak was caused by significant defects in the joint welds in a specific location at the bottom of the tank car.** These defective welds revealed a thickness of as little as 0.03125 inches, far less than the required 0.44 inches. JA517-JA518, JA522; 49 C.F.R. § 179.201-1 (DOT 111A100W1). The extensive analysis FRA had performed identified large pockets of slag and other nonmetallic elements extending almost entirely through the weld. JA517-JA518. Based on its technical expertise, FRA determined these pockets and inclusions led to the crack that caused the tank car to leak ethanol. JA3; *see also* JA517-JA518.

▪ **Inspection and testing of other ARI-300 and ACF-300 tank cars revealed that a significant number of them had the same defects as the leaking tank car.** After FRA's inspection of the leaking tank car revealed serious weld defects, the owner of the car, CIT, agreed to submit all of its other ARI-300 tank cars for inspection and testing. CIT kept FRA up to date on the status of its inspections and tests of those tank cars. Initial data showed CIT had tested 386 of its ARI-300 cars and found that a full 15% of those cars possessed the same defects as the tank car that had leaked ethanol. JA4. According to the last update CIT provided before FRA issued the Revised Directive, CIT found that approximately 11% of those cars contained the same weld joint defects as the tank car that had leaked. JA1849-JA1850. Tests performed by ARI also found defects in a number of ARI-300 and ACF-300 cars. JA1702-JA1703, JA1719.

▪ **FRA's analysis revealed the only common denominator between the tank car that leaked and the other identified tank cars with weld defects was the manufacture of the cars.** FRA excluded other potential common factors in tank cars with identified weld defects. For example, the defects were found on the ARI-300 and ACF-300 tank cars welded by seven different welders. JA558, JA751, JA753. The problem was therefore not limited to the mere fact that one welder was

using improper procedures. FRA's engineering experts concluded that instead, the problem was the petitioner lacked effective quality control procedures required under 49 C.F.R. § 179.7.⁸ Moreover, the design of the weld joints on the cars made it more difficult for welders to properly prevent the accumulation of slag pockets and other nonmetallic substances. This problem further contributed to petitioner's failure to ensure proper cleaning and inspection of the welds between weld passes, thus causing these weld flaws to be introduced in the manufacturing process and to go undetected until FRA's investigation. JA4-JA5.

1. FRA Considered the Analysis and Evidence Put Forward by Petitioner.

In light of the findings identified above, FRA reasonably concluded that the ARI-300 and ACF-300 tank cars were susceptible to potential weld failure, and, thus, they should be inspected and tested. Petitioner makes no effort to refute any of these facts. Instead, petitioner attempts to explain them away by asserting that the flaws found by FRA are unimportant and that FRA failed to consider the evidence and

⁸ Under 49 C.F.R. § 179.7, Petitioner must have a quality assurance program that, at a minimum: (1) ensures the finished product conforms to the requirements of the applicable specification and regulations of this subchapter; (2) has the means to detect any nonconformity in the manufacturing, repair, inspection, testing, and qualification or maintenance program of the tank car; and (3) prevents nonconformities from recurring. Petitioner met none of these requirements. Instead, Petitioner produced a substantial number of cars that failed to conform to their specification and the regulations. The nonconformities were not detected until after FRA initiated its investigation into the tank car that leaked. 49 C.F.R. § 171.1 *et seq.*

analysis submitted by petitioner. Petitioner's assertions do nothing to undermine FRA's Revised Directive.

Petitioner repeatedly attempts to minimize the leak that actually occurred, portraying it as a small leak of little significance. In fact, it was a serious event that could have had disastrous consequences. In this case, ethanol leaked prior to detection. JA193-JA195. Ethanol is highly flammable and can present serious health risks. *See* Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, *2016 Emergency Response Guidebook (PHMSA Guidebook)* Guide 127 at 192-93, <https://phmsa.dot.gov/hazmat/outreach-training/erg>. If the leak had gone undetected, it could have accelerated and caused a potentially catastrophic incident.

Moreover, as specification DOT-111 tank cars, ARI-300 and ACF-300 cars are authorized to transport a wide array of hazardous substances, including hazardous materials such as molten phenol and toluene. *See PHMSA Guidebook*. Molten phenol may cause severe injury or death if it is inhaled, ingested, or comes in contact with skin. *See id.*, Guide 153 at 244. Toluene is a highly flammable material easily ignited by heat, sparks or flame. Additionally, toluene is toxic if it is inhaled or absorbed through the skin. *See id.*, Guide 130 at 198. Had FRA failed to direct tank car owners to perform inspections and tests of the ARI-300 and ACF-300 tank cars for similar weld defects, it would have been exposing the public at large to the possibility of a catastrophic, and preventable, disaster.

Petitioner also attaches much significance to the fact that the tank cars with weld flaws did not have cracks or leaks. Br. 39. However, petitioner offers no authority for the proposition that FRA must wait for a potentially catastrophic leak to occur before taking action. A significant percentage of the ARI-300 and ACF-300 cars had the same defects as the car that leaked here. Over time, and subject to the stresses of the cars' use, these defects can cause the flawed welds to crack and result in leaks. It is neither arbitrary nor capricious for FRA to take steps to attempt to prevent such a failure. Here, FRA's narrowly tailored order under 49 C.F.R. § 180.509(b)(4) ensures that action will be taken to inspect tank cars with suspected significant welding defects to prevent future potentially catastrophic leaks.

Petitioner further asserts that FRA failed to adequately address an analysis petitioner provided to FRA, which petitioner claims demonstrates the weld defects identified in the ARI-300 and ACF-300 tank cars would "not result in or create any threat of cracks or leaks forming because the stress level will not drive crack growth." Br. 39. Petitioner is incorrect. FRA took petitioner's analysis into account in formulating the Revised Directive. JA12-JA21. The record shows that FRA worked closely with petitioner to understand and analyze the information that FRA obtained from petitioner and other sources. *See, e.g.*, JA175, JA181, JA255, JA284, JA389, JA395, JA401, JA403, JA514, JA515, JA569, JA741, JA768, JA827, JA829, JA1486, JA1510, JA1514, JA1546. Based on consideration of that information, and as discussed in the October 24, 2016 meeting, FRA did not find petitioner's analysis

compelling or contrary to its own analysis. That conclusion was based in part on the following facts:

- Although petitioner now argues its analysis proves that the weld defects could not cause cracks, petitioner conceded prior to FRA's issuance of the Revised Directive that its inspections *could not conclusively determine whether or not cracks were present*. JA1845 (e-mail message referring to studies indicating that “cracks and lack of fusion may be indistinguishable”). Petitioner therefore admitted at the time that its analysis did not contradict FRA's assessment that the weld defects could lead to cracks, and had in fact caused the cracks on the leaking tank car.
- Petitioner's analysis assumed weld defects far smaller than those actually observed in the tank car that leaked. The extensive testing performed on the leaking tank car showed that its weld joint thickness had an incredibly thin minimum thickness of 0.03125 inches. JA 517-JA518, JA522. Yet in its analysis, petitioner inexplicably assumed that the joint weld at issue had a thickness of 0.44 inches—the minimum required thickness for compliance with the regulations and the Tank Car Manual. JA1823.
- Petitioner's analysis does not even attempt to provide an alternative explanation for the subject tank car's hazardous materials leak. The analysis does not, for example, attempt to replicate the

conditions found on the leaking tank car and reverse engineer those conditions to determine the cause. Nor does it identify other factors that may have contributed to the tank car's leak.

Given that petitioner's analysis neither simulated the actual weld defects encountered nor offered any alternative hypothesis for the source of the tank car leak, nor could its protocols even determine whether or not cracks were present on its tank cars, FRA reasonably concluded that petitioner's information was not especially relevant to FRA's analysis of the root causes of the leak, much less did it undermine that analysis.

The fact that FRA did not explicitly address petitioner's analysis in the Revised Directive does not cast doubt upon its decision. An agency "need not address every comment, but it must respond in a reasoned manner to those that raise significant problems." *Reytblatt v. Nuclear Regulatory Comm'n*, 105 F.3d 715, 722 (D.C. Cir. 1997). Thus, although petitioner's analysis was discussed at length with petitioner itself, FRA saw no particular need to address that analysis in the Revised Directive, except by providing a thorough summary of its own findings and analysis. "The failure to respond to comments is significant only insofar as it demonstrates that the agency's decision was not based on a consideration of the relevant factors." *Covad Commc'ns Co. v. FCC*, 450 F.3d 528, 550 (D.C. Cir. 2006) (quoting *Thompson v. Clark*, 741 F.2d 401, 409 (D.C. Cir. 1984)). To the contrary, the record here shows that FRA was focused on the critical factors: the causes of the tank car's leak and the scope and

nature of inspections and tests necessary to address the widespread similar flaws in other ARI-300 and ACF-300 tank cars.

Petitioner asserts that “the Directive provides no facts, ‘particularized’ or otherwise, that substantiate the leap in logic connecting the existence of a nonconforming weld condition in a non-critical area of the tank cars subject to the Directive to the possibility of a leak or unsafe operating condition.” Br. 40 (quoting *ALLTEL Corp. v. FCC*, 838 F.2d 551, 560-61 (D.C. Cir. 1988)). But that is not the case. The Revised Directive explains FRA’s expert technical analysis of the leaking tank car, which concluded that the hazardous materials leak was caused by weld defects in a particular area of the tank car.⁹ JA2-JA3. The Revised Directive further explains that tests of hundreds of other ARI-300 and ACF-300 cars revealed the same types of defects in the same area. JA4. The Revised Directive also excludes other potential causes of the leak. *Id.* And the Revised Directive provides a causal analysis, explaining why those tank cars, which are only manufactured by petitioner and one other company, were especially susceptible to weld defects in this area of the tank car. JA4-JA5.

Next, petitioner claims that “*de minimis*” weld flaws routinely exist. But even if that is the case, it does not support petitioner’s argument that FRA was wrong to

⁹ Petitioner terms this area of the tank car “noncritical,” even though Petitioner does not dispute that it is the location of the joint welds where the leak originated. *See, e.g.*, Br. 41. In any event, the applicable specifications make no such distinction between “critical” and “noncritical” areas. JA307-JA308 §§ 2.0-2.3.4.

require further inspection and testing “based on such minor conditions.” Br. 41. The flaws identified by FRA in this case are *not* permissible under the regulations and they render the cars noncompliant with the regulations and the Tank Car Manual. The Revised Directive simply accelerates the timetable for inspection and testing and sets forth a standard designed to ensure that these particular weld flaws are identified, considering the particular circumstances present here. JA21-JA27, JA307 § 2.2.1, JA318 § 10.0; *see also* 49 C.F.R. § 179.200-10(a) (“All joints shall be fusion-welded in compliance with the requirements of AAR Specifications for Tank Cars, appendix W (IBR, see §171.7 of this subchapter).”). It is unclear why petitioner chooses to discuss only “*de minimis*” flaws when in fact flaws discovered by petitioner’s own testing revealed slag inclusions exceeding permissible tolerance levels in 17% of cases, JA1723, and one slag inclusion found by CIT extended 0.392 inches, almost all the way through the weld. JA1551.

2. The Revised Directive Is Not Inconsistent with the Reasons Stated in the Original Directive.

Petitioner asserts that FRA changed justifications for the Revised Directive between issuance of the original Directive and the Revised Directive, and this supposed change demonstrates that FRA lacked an objectively reasonable basis. Pet. Br. 43-45. The premise of this argument is incorrect.

The Revised Directive expressly incorporated the Directive’s factual findings and analysis. JA11. The additional background and discussion in the Revised

Directive further elaborates on some aspects of the findings and analysis in the

Directive, but the analysis is fundamentally the same:

As a result of non-conforming welding practices, FRA concluded [the ARI-300 and ACF-300] cars may have substantial weld defects at the sump and BOV skid groove attachment welds, potentially affecting each tank's ability to retain its contents during transportation.

JA11. Petitioner emphasizes its claim that the Revised Directive does not use the word “crack” except in two generic instances. Pet. Br. 44. In fact, the Revised Directive states that tank car owners must test their cars “to locate, interpret, evaluate, and size cracks, incomplete penetration, incomplete fusion, and slag inclusions.”

JA12. In other words, consistent with the original Directive, the Revised Directive instructs owners to inspect for cracks and the conditions that FRA concluded could cause cracks to occur.¹⁰ This does not suggest that FRA was in any way backing away from its findings and analysis; indeed, it shows the contrary is true. In short, petitioner’s “shifting rationale” argument fails to identify any meaningful shift in FRA’s analysis.

¹⁰ Although the regulations do not define the term “crack,” FRA’s freight car regulations define “cracked” in a common-sense manner to mean: “fractured without complete separation into parts.” 49 C.F.R. § 215.5(b). This is in contrast to “break,” which is a fracture *with* a complete separation into parts. *Id.* § 215.5(a). It is self-evident that for a leak to occur at the weld joint, there must be some sort of fracture allowing the material inside the tank to escape. As FRA uses the terms, either that fracture is a “crack,” or it is a “break.” Because a complete separation was not observed on the leaking tank car, it was categorized as a crack, and cracking is FRA’s primary concern with respect to other ARI-300 and ACF-300 tank cars. JA2, JA3.

3. The Revised Directive Explains Why the Tank Car Defects Violate the Regulations.

Petitioner's assertion that the Revised Directive "nowhere explains how the cars are 'noncompliant' with applicable regulations" (Br. 45) is puzzling. In fact, FRA explained the precise basis for this conclusion. Based on FRA's analysis, the "only way" the defects it observed "could form is if a welder does not follow appropriate welding practices during welding by failing to thoroughly clean and visually inspect every weld pass before depositing the next weld pass as the Hazardous Materials Regulations . . . and AAR's Tank Car Manual" require. JA3 (citing 49 C.F.R. § 179.200-10) (internal citation omitted).

Applicable regulations require all joints to be "fusion-welded in compliance with the requirements" of the AAR Tank Car Manual, 49 C.F.R. § 149.200-10, which is incorporated into the regulations by 49 C.F.R. § 171.7. Appendix W of the Tank Car Manual, which the Revised Directive cites, specifically requires welders to examine the welds at each welding pass "to ensure they are free from cracks, overlap, incomplete fusion, and inclusions." JA307 § 2.2.1. The presence of defects on such a significant percentage of the ARI-300 and ACF-300 tank cars also indicate that petitioner's inspection and testing programs for these cars did not "[e]nsure the finished product conforms to the requirements of the applicable specification and regulations of this subchapter"; did not "detect any nonconformity in the manufacturing, repair, inspection, testing, and qualification or maintenance program";

and did not “prevent nonconformities from recurring.” 49 C.F.R. § 179.7(a); *see also id.* § 180.511(b) (requiring inspections to reveal no defects that would cause cracks to develop prior to the next scheduled inspection and testing interval). Moreover, as discussed earlier, while a weld joint may still comply with regulations despite minor weld flaws, the weld defects at issue here fail to comply with the minimum requirements of the regulations, the applicable DOT tank car specifications, and applicable industry standards, including the Tank Car Manual. JA318 § 10.0, JA333 § 14.0.

B. The Directive Explains the Basis for Its Requirement That Tests Have a 90% Probability of Detecting Potentially Dangerous Weld Defects.

Given its concerns about hazardous materials leaks from the ARI-300 and ACF-300 tank cars, FRA required tank car tests to establish a 90% probability of detecting weld defects that violate the regulations and could put the tank car in an unsafe operating condition. Establishing the 90% probability of detection threshold is the quintessential determination made by an agency based on its specialized expertise in a highly technical area. *Troy Corp.*, 120 F.3d at 283. In these circumstances, the decision was reasonable.

Generally, tank car owners must ensure that certain structural elements, including welds, meet the requirements of the regulations, either by following appropriate policies and procedures during the manufacturing, repair, or maintenance of the tank car, or by undergoing structural integrity inspections and tests. *See* 49

C.F.R. § 180.509(e). Such structural integrity inspections must include inspection and testing of certain welds by one or more of the following nondestructive testing methods: (1) dye penetrant testing; (2) radiographic examination; (3) magnetic particle testing; (4) ultrasonic testing; and (5) visual inspections. *Id.* § 180.509(e)(4). A tank car passes a required structural integrity inspection when the testing shows no structural defect that may initiate or propagate cracks, leading to failure of the tank before the next inspection and test interval. *Id.* § 180.511(b).

Although the regulations do not set out a specific, universal probability of detection standard for routine interval inspection and testing, tank car facilities are required to establish the reliability of their testing methods and qualify and quantify them to meet the performance standards required by the regulations. *See* 49 C.F.R. § 179.7(a), (b)(10). Where, as here, FRA has reason to believe that the regulatory specification and quality assurance standards have not been met, it is reasonable for the agency to require a specific and stringent standard to ensure that defects are identified and remedied appropriately.

Contrary to petitioner's suggestion, the 90% probability of detection threshold is an established level of inspection reliability. In support of its decision to use a 90% threshold, the Directive cites a Department of Defense handbook, which discusses the 90% probability of detection (with an accompanying 95% confidence interval) standard as a "de facto design criterion" for nondestructive test methods. JA6, JA975. An FRA study also concluded that a 90% probability of detection was

achievable given properly trained technicians. JA1692-JA1697. The Revised Directive cites the 1993 proposed rule establishing tank car manufacturing quality assurance program standards as first proposed, in which the Department noted that “[a]s a rule,” tank car facilities using various nondestructive testing methods “can expect about 90 per cent reliability in detecting flaws.” FRA, *Detection and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws and Other Defects of Tank Car Tanks*, 58 Fed. Reg. 48,485, 48,487 (Sept. 16, 1993);¹¹ see also JA1608. The record shows that FRA considered its own prior research finding that inspections that do not reach the 90% threshold “are indicative of a procedure that has poor detection/discrimination capability.” JA1295; see also JA975 (Department of Defense handbook recommending adoption of a 90% probability of detection threshold).

The 90% probability of detection’s pedigree is even older than 1993; it was first developed by the U.S. Air Force for calculating airplane damage tolerance requirements. See U.S. Air Force Damage Tolerance Handbook, AFFDL-TR-79-3021 (March 1979), <http://www.dtic.mil/dtic/tr/fulltext/u2/a078216.pdf>. It is the same standard NASA uses for detection of defects in its metallic component coatings. See NASA Standard 5009 (Sept. 11, 2006), <http://standards.nasa.gov>. Given the widespread and established use of the 90% probability of detection standard for

¹¹ The proposed rule notes that ultrasound detection rates are “somewhat lower,” although research suggests that those rates have caught up with other nondestructive testing rates in the intervening 24 years. See JA1676-JA1677.

nondestructive testing, FRA's decision to apply that standard here was reasonable and well within its discretion.

Moreover, FRA provided petitioner with guidance regarding how to detect weld defects with a 90% probability of detection, as well as references to engineering and military standards. JA831, JA1140, JA1154, JA1155. Petitioner implemented these guidelines in formulating its inspection procedures. JA855, JA1478, JA1490, JA1498. In response to petitioner's additional concerns, FRA clarified, in the Revised Directive, the size of the defects and cracks that would have to be detected to the 90% standard and the method for assuring the standard would be met. JA18-JA19. And by the time the Revised Directive was issued, petitioner had already confirmed that it had established a protocol that satisfied the 90% standard with respect to volumetric inspection, which contradicts its suggestion that satisfying this standard was infeasible. JA18.

C. The Directive Adequately Explains the Basis for Its Recordkeeping Requirements.

Petitioner finally argues that FRA did not provide a basis for the recordkeeping requirements set forth in the Revised Directive. FRA concluded, based on its significant technical expertise, that the recordkeeping requirements were feasible and not onerous in light of the current state of tank car inspection and testing equipment. JA19. FRA reasonably concluded that the requirements were necessary to "provide

adequate context” if the records needed to be examined in the future. *Id.* Petitioner offers no basis to refute that conclusion.

CONCLUSION

For the foregoing reasons, the petition should be denied.

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CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with the requirements of Federal Rule of Appellate Procedure 32(a). This brief contains 10,937 words.

s/ Nitin Shah

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CERTIFICATE OF SERVICE

I hereby certify that on May 15, 2017, I electronically filed the foregoing brief with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the appellate CM/ECF system. Participants in the case are registered CM/ECF users, and service will be accomplished by the appellate CM/ECF system.

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ADDENDUM

**ADDENDUM
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49 U.S.C. 5103. General regulatory authority.

. . . .

(b) Regulations for safe transportation.--(1) The Secretary shall prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. The regulations--

(A) apply to a person who--

- (i) transports hazardous material in commerce;
- (ii) causes hazardous material to be transported in commerce;
- (iii) designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce;
- (iv) prepares or accepts hazardous material for transportation in commerce;
- (v) is responsible for the safety of transporting hazardous material in commerce;
- (vi) certifies compliance with any requirement under this chapter; or
- (vii) misrepresents whether such person is engaged in any activity under clause (i) through (vi); and

(B) shall govern safety aspects, including security, of the transportation of hazardous material the Secretary considers appropriate.

. . . .

49 U.S.C. 5121. Administrative.

(a) General authority.--To carry out this chapter, the Secretary may investigate, conduct tests, make reports, issue subpoenas, conduct hearings, require the production of records and property, take depositions, and conduct research, development, demonstration, and training activities. Except as provided in subsections (c) and (d), after notice and an opportunity for a hearing, the Secretary may issue an order requiring compliance with this chapter or a regulation prescribed, or an order, special permit, or approval issued, under this chapter.

(b) Records, reports, and information.--A person subject to this chapter shall--

- (1) maintain records and property, make reports, and provide information the Secretary by regulation or order requires; and
- (2) make the records, property, reports, and information available for inspection when the Secretary undertakes an investigation or makes a request.

(c) Inspections and investigations.--

- (1) In general.--A designated officer, employee, or agent of the Secretary--
- (A) may inspect and investigate, at a reasonable time and in a reasonable manner, records and property relating to a function described in section 5103(b)(1);
 - (B) except in the case of packaging immediately adjacent to its hazardous material contents, may gain access to, open, and examine a package offered for, or in, transportation when the officer, employee, or agent has an objectively reasonable and articulable belief that the package may contain a hazardous material;
 - (C) may remove from transportation a package or related packages in a shipment offered for or in transportation for which--
 - (i) such officer, employee, or agent has an objectively reasonable and articulable belief that the package may pose an imminent hazard; and
 - (ii) such officer, employee, or agent contemporaneously documents such belief in accordance with procedures set forth in guidance or regulations prescribed under subsection (e);
 - (D) may gather information from the offeror, carrier, packaging manufacturer or tester, or other person responsible for the package, to ascertain the nature and hazards of the contents of the package;
 - (E) as necessary, under terms and conditions specified by the Secretary, may order the offeror, carrier, packaging manufacturer or tester, or other person responsible for the package to have the package transported to, opened, and the contents examined and analyzed, at a facility appropriate for the conduct of such examination and analysis;
 - (F) when safety might otherwise be compromised, may authorize properly qualified personnel to assist in the activities conducted under this subsection; and
 - (G) shall provide to the affected offeror, carrier, packaging manufacturer or tester, or other person responsible for the package reasonable notice of--
 - (i) his or her decision to exercise his or her authority under paragraph (1);
 - (ii) any findings made; and
 - (iii) any actions being taken as a result of a finding of noncompliance.
- (2) Display of credentials.--An officer, employee, or agent acting under this subsection shall display proper credentials, in person or in writing, when requested.
- (3) Safe resumption of transportation.--In instances when, as a result of an inspection or investigation under this subsection, an imminent hazard is not found to exist, the Secretary, in accordance with procedures set forth in regulations prescribed under subsection (e), shall assist--
- (A) in the safe and prompt resumption of transportation of the package concerned; or
 - (B) in any case in which the hazardous material being transported is perishable, in the safe and expeditious resumption of transportation of the perishable hazardous material.

(d) Emergency orders.--

(1) In general.--If, upon inspection, investigation, testing, or research, the Secretary determines that a violation of a provision of this chapter, or a regulation prescribed under this chapter, or an unsafe condition or practice, constitutes or is causing an imminent hazard, the Secretary may issue or impose emergency restrictions, prohibitions, recalls, or out-of-service orders, without notice or an opportunity for a hearing, but only to the extent necessary to abate the imminent hazard.

(2) Written orders.--The action of the Secretary under paragraph (1) shall be in a written emergency order that--

(A) describes the violation, condition, or practice that constitutes or is causing the imminent hazard;

(B) states the restrictions, prohibitions, recalls, or out-of-service orders issued or imposed; and

(C) describes the standards and procedures for obtaining relief from the order.

(3) Opportunity for review.--After taking action under paragraph (1), the Secretary shall provide for review of the action under section 554 of title 5 if a petition for review is filed within 20 calendar days of the date of issuance of the order for the action.

(4) Expiration of effectiveness of order.--If a petition for review of an action is filed under paragraph (3) and the review under that paragraph is not completed by the end of the 30-day period beginning on the date the petition is filed, the action shall cease to be effective at the end of such period unless the Secretary determines, in writing, that the imminent hazard providing a basis for the action continues to exist.

(5) Out-of-service order defined.--In this subsection, the term “out-of-service order” means a requirement that an aircraft, vessel, motor vehicle, train, railcar, locomotive, other vehicle, transport unit, transport vehicle, freight container, potable tank, or other package not be moved until specified conditions have been met.

(e) Regulations.--

(1) Temporary regulations.--Not later than 60 days after the date of enactment of the Hazardous Materials Transportation Safety and Security Reauthorization Act of 2005, the Secretary shall issue temporary regulations to carry out subsections (c) and (d). The temporary regulations shall expire on the date of issuance of the regulations under paragraph (2).

(2) Final regulations.--Not later than 1 year after such date of enactment, the Secretary shall issue regulations to carry out subsections (c) and (d) in accordance with subchapter II of chapter 5 of title 5.

(3) Matters to be addressed.--The regulations issued under this subsection shall address--

(A) the safe and expeditious resumption of transportation of perishable hazardous material, including radiopharmaceuticals and other medical products, that may require timely delivery due to life-threatening situations;

(B) the means by which--

(i) noncompliant packages that present an imminent hazard are placed out-of-service until the condition is corrected; and

(ii) noncompliant packages that do not present a hazard are moved to their final destination;

(C) appropriate training and equipment for inspectors; and

(D) the proper closure of packaging in accordance with the hazardous material regulations.

(f) Facility, staff, and reporting system on risks, emergencies, and actions.—

(1) The Secretary shall--

(A) maintain a facility and technical staff sufficient to provide, within the United States Government, the capability of evaluating a risk related to the transportation of hazardous material and material alleged to be hazardous;

(B) maintain a central reporting system and information center capable of providing information and advice to law enforcement and firefighting personnel, other interested individuals, and officers and employees of the Government and State and local governments on meeting an emergency related to the transportation of hazardous material; and

(C) conduct a continuous review on all aspects of transporting hazardous material to decide on and take appropriate actions to ensure safe transportation of hazardous material.

(2) Paragraph (1) of this subsection does not prevent the Secretary from making a contract with a private entity for use of a supplemental reporting system and information center operated and maintained by the contractor.

(g) Grants and cooperative agreements.--The Secretary may enter into grants and cooperative agreements with a person, agency, or instrumentality of the United States, a unit of State or local government, an Indian tribe, a foreign government (in coordination with the Department of State), an educational institution, or other appropriate entity--

(1) to expand risk assessment and emergency response capabilities with respect to the safety and security of transportation of hazardous material;

(2) to enhance emergency communications capacity as determined necessary by the Secretary, including the use of integrated, interoperable emergency communications technologies where appropriate;

(3) to conduct research, development, demonstration, risk assessment, and emergency response planning and training activities; or

(4) to otherwise carry out this chapter.

(h) Report.--The Secretary shall, once every 2 years, prepare and make available to the public on the Department of Transportation's Internet Web site a comprehensive report on the transportation of hazardous materials during the preceding 2 calendar years. The report shall include--

(1) a statistical compilation of accidents and casualties related to the transportation of hazardous material;

(2) a list and summary of applicable Government regulations, criteria, orders, and special permits;

(3) a summary of the basis for each special permit;

(4) an evaluation of the effectiveness of enforcement activities relating to a function regulated by the Secretary under section 5103(b)(1) and the degree of voluntary compliance with regulations;

(5) a summary of outstanding problems in carrying out this chapter in order of priority; and

(6) recommendations for appropriate legislation.

(2) A proceeding to prescribe the regulations must be conducted under section 553 of title 5, including an opportunity for informal oral presentation.

49 U.S.C. 5122. Enforcement.

(a) General.--At the request of the Secretary, the Attorney General may bring a civil action in an appropriate district court of the United States to enforce this chapter or a regulation prescribed or order, special permit, or approval issued under this chapter. The court may award appropriate relief, including a temporary or permanent injunction, punitive damages, and assessment of civil penalties considering the same penalty amounts and factors as prescribed for the Secretary in an administrative case under section 5123.

(b) Imminent hazards.—

(1) If the Secretary has reason to believe that an imminent hazard exists, the Secretary may bring a civil action in an appropriate district court of the United States--

(A) to suspend or restrict the transportation of the hazardous material responsible for the hazard; or

(B) to eliminate or mitigate the hazard.

(2) On request of the Secretary, the Attorney General shall bring an action under paragraph (1) of this subsection.

(c) Withholding of clearance.--(1) If any owner, operator, or individual in charge of a vessel is liable for a civil penalty under section 5123 of this title or for a fine under section 5124 of this title, or if reasonable cause exists to believe that such owner, operator, or individual in charge may be subject to such a civil penalty or fine, the

Secretary of Homeland Security, upon the request of the Secretary, shall with respect to such vessel refuse or revoke any clearance required by section 60105 of title 46.

(2) Clearance refused or revoked under this subsection may be granted upon the filing of a bond or other surety satisfactory to the Secretary.

49 C.F.R. § 179.1. General.

(a) This part prescribes the specifications for tanks that are to be mounted on or form part of a tank car and which are to be marked with a DOT specification.

(b) Except as provided in paragraph (c) of this section, tanks to which this part is applicable, must be built to the specifications prescribed in this part.

(c) Tanks built to specifications predating those in this part may continue in use as provided in § 180.507 of this subchapter.

(d) Any person who performs a function prescribed in this part, shall perform that function in accordance with this part.

(e) When this part requires a tank to be marked with a DOT specification (for example, DOT-105A100W), compliance with that requirement is the responsibility of the tank builder. Marking the tank with the DOT specification shall be understood to certify compliance by the builder that the functions performed by the builder, as prescribed in this part, have been performed in compliance with this part.

(f) The tank builder should inform each person to whom that tank is transferred of any specification requirements which have not been met at time of transfer.

49 C.F.R. § 179.7. Quality assurance program.

(a) At a minimum, each tank car facility shall have a quality assurance program, approved by AAR, that—

(1) Ensures the finished product conforms to the requirements of the applicable specification and regulations of this subchapter;

(2) Has the means to detect any nonconformity in the manufacturing, repair, inspection, testing, and qualification or maintenance program of the tank car; and

(3) Prevents non-conformities from recurring.

(b) At a minimum, the quality assurance program must have the following elements

(1) Statement of authority and responsibility for those persons in charge of the quality assurance program.

(2) An organizational chart showing the interrelationship between managers, engineers, purchasing, construction, inspection, testing, and quality control personnel.

(3) Procedures to ensure that the latest applicable drawings, design calculations, specifications, and instructions are used in manufacture, inspection, testing, and repair.

(4) Procedures to ensure that the fabrication and construction materials received are properly identified and documented.

(5) A description of the manufacturing, repair, inspection, testing, and qualification or maintenance program, including the acceptance criteria, so that an inspector can identify the characteristics of the tank car and the elements to inspect, examine, and test at each point.

(6) Monitoring and control of processes and product characteristics during production.

(7) Procedures for correction of nonconformities.

(8) Provisions indicating that the requirements of the AAR Specifications for Tank Cars (IBR, see § 171.7 of this subchapter), apply.

(9) Qualification requirements of personnel performing non-destructive inspections and tests.

(10) Procedures for evaluating the inspection and test technique employed, including the accessibility of the area and the sensitivity and reliability of the inspection and test technique and minimum detectable crack length.

(11) Procedures for the periodic calibration and measurement of inspection and test equipment.

(12) A system for the maintenance of records, inspections, tests, and the interpretation of inspection and test results.

....

49 C.F.R. § 180.509. Requirements for inspection and test of specification tank cars.

(a) General. Each tank car owner must ensure that a tank car facility:

(1) Inspects and tests each item according to the requirements specified in this section;

(2) Evaluates each item according to the acceptable results of inspections and tests specified in § 180.511;

(3) Marks each tank car as specified in § 180.515 that is qualified to transport hazardous materials;

(4) Prepares the documentation as required by § 180.517 for each item qualified under this section. A copy of the documentation required by § 180.517 must be sent to the owner as appropriate and according to the owner's instructions.

(b) Conditions requiring qualification of tank cars. Without regard to the qualification compliance date requirements of any paragraph of this section, an owner of a tank car or an internal coating or lining must ensure an appropriate inspection and test according to the type of defect and the type of maintenance or repair performed if:

(1) The tank car shows evidence of abrasion, corrosion, cracks, dents, distortions, defects in welds, or any other condition that may make the tank car unsafe for transportation,

(2) The tank car was in an accident and shows evidence of damage to an extent that may adversely affect its capability to retain its contents or to otherwise remain railworthy.

(3) The tank bears evidence of damage caused by fire.

(4) The Associate Administrator for Railroad Safety, FRA, requires it based on the existence of an objectively reasonable and articulable belief that a tank car or a class or design of tank cars may be in an unsafe operating condition.

....

49 C.F.R. § 180.511. Acceptable results of inspections and tests.

Provided it conforms to other applicable requirements of this subchapter, a tank car is qualified for use if it successfully passes the inspections and tests set forth below conducted in accordance with this subpart. A representation of that qualification must consist of marking the tank in accordance with § 180.515.

(a) Visual inspection. A tank car successfully passes the visual inspection when the inspection shows no structural defect that may cause leakage from or failure of the tank before the next inspection and test interval.

(b) Structural integrity inspection and test. A tank car successfully passes the structural integrity inspection and test when it shows no structural defect that may initiate cracks or propagate cracks and cause failure of the tank before the next inspection and test interval.

(c) Service life shell thickness. A tank car successfully passes the service life shell thickness inspection when the tank shell and heads show no thickness reduction below that allowed in § 180.509(g).

(d) Safety system inspection. A tank car successfully passes the safety system inspection when each thermal protection system, tank head puncture resistance system, coupler vertical restraint system, and system used to protect discontinuities (e.g., breakage grooves on bottom outlets and protective housings) on the tank car

conform to this subchapter and show no indication of a defect that may reduce reliability before the next inspection and test interval.

(e) Lining and coating inspection. A tank car successfully passes the lining and coating inspection and test when the lining or coating conforms to the owner's acceptance criteria.

(f) Leakage pressure test. A tank car successfully passes the leakage pressure test when all product piping, fittings and closures show no indication of leakage.

(g) Hydrostatic test. A Class 107 tank car, the inner tank of a Class 115 tank car, or a riveted tank car successfully passes the hydrostatic test when it shows no leakage, distortion, excessive permanent expansion, or other evidence of weakness that might render the tank car unsafe for transportation service.

(h) Service equipment. A tank car successfully passes the service equipment inspection and test when this equipment conforms to this subchapter and applicable provisions of Appendix D of the AAR Specifications for Tank Cars (IBR, see § 171.7 of this subchapter), and shows no indication of a defect that may reduce reliability during the qualification interval.